81. (Amended) A method of testing a candidate compound for the ability to act as an agonist of a high affinity melatonin receptor ligand, said method comprising:

a) contacting said candidate compound with a cell comprising an expression vector encoding a high-affinity melatonin receptor protein, wherein the expression vector comprises a sequence that hybridizes to a probe having the sequence of the complement of SEQ ID NO:5 under the following conditions: hybridization in 25% formamide, 1 M sodium chloride, 1% SDS, 10% dextran sulfate, 100 µg/ml denatured salmon sperm at 42 °C, and filters washed in 2x SSC, 1% SDS at 55 °C for 1 hour;

b) measuring intracellular cAMP concentration in said cell; and

c) where said contacting causes a decrease in intracellular cAMP concentration, identifying said candidate compound as an agonist of a high affinity melatonin receptor ligand.

83. (Amended) A method of testing a candidate compound for the ability to act as an agonist of a high affinity melatonin receptor ligand, said method comprising:

a) contacting said candidate compound with a cell comprising an expression vector encoding a high-affinity melatonin receptor protein, wherein the expression vector comprises a sequence that hybridizes to a probe having the sequence of the complement of SEQ ID NO:11 under the following conditions: hybridization in 50% formamide, 1 M sodium chloride, 1% SDS, 10% dextran sulfate, 100 µg/ml denatured salmon sperm at 42 °C, and filters washed in 2x SSC, 1% SDS at 65 °C for 1 hour;

b) measuring intracellular cAMP concentration in said cell; and

c) where said contacting causes a decrease in intracellular cAMP concentration, identifying said candidate compound as an agonist of a high affinity melatonin receptor ligand.

84. (Amended) A method of testing a candidate compound for the ability to act as an agonist of a high affinity melatonin receptor ligand, said method comprising:

a) contacting said candidate compound with a cell comprising an expression vector encoding a high-affinity melatonin receptor protein, wherein the expression vector comprises a sequence that hybridizes to a probe having the sequence of the complement of SEQ ID NO:11 under the following conditions: hybridization in 25% formamide, 1 M sodium chloride, 1%

SDS, 10% dextran sulfate, 100 μg/ml denatured salmon sperm at 42 °C, and filters washed in 2x SSC, 1% SDS at 55 °C for 1 hour;

b) measuring intracellular cAMP concentration in said cell; and

c) where said contacting causes a decrease in intracellular cAMP concentration, identifying said candidate compound as an agonist of a high affinity melatonin receptor ligand. --

Please add new claims 86-89.

-- 86. A method of testing a candidate compound for the ability to act as an agonist of a high affinity melatonin receptor ligand, said method comprising:

a) contacting said candidate compound with a cell comprising an expression vector encoding a high-affinity melatonin receptor protein that consists of the amino acid sequence of SEQ ID NO:12, or a melatonin binding fragment thereof, wherein the cell expresses on its surface said high-affinity melatonin receptor protein or melatonin binding fragment thereof;

b) measuring intracellular cAMP concentration in said cell; and

c) where said contacting causes a decrease in intracellular cAMP concentration, identifying said candidate compound as an agonist of a high affinity melatonin receptor ligand.

87. A method of testing a candidate compound for the ability to act as an agonist of a high affinity melatonin receptor ligand, said method comprising:

a) contacting said candidate compound with a cell comprising an expression vector encoding a high-affinity melatonin receptor protein comprising the amino acid sequence of SEQ ID NO:6, or a melatonin binding fragment thereof, wherein the cell expresses on its surface said high-affinity melatonin receptor protein or melatonin binding fragment thereof;

b) measuring intracellular cAMP concentration in said cell; and

c) where said contacting causes a decrease in intracellular cAMP concentration, identifying said candidate compound as an agonist of a high affinity melatonin receptor ligand.

88. A method of testing a candidate compound for the ability to act as an agonist of a high affinity melatonin receptor ligand, said method comprising:

a) contacting said candidate compound with a cell comprising an expression vector encoding a high-affinity melatonin receptor protein that comprises the amino acid sequence of SEQ ID NO:12, or a melatonin binding fragment thereof, wherein the cell expresses on its surface said high-affinity melatonin receptor protein or melatonin binding fragment thereof;

b) measuring intracellular cAMP concentration in said cell; and

c) where said contacting causes a decrease in intracellular cAMP concentration, identifying said candidate compound as an agonist of a high affinity melatonin receptor ligand.

89. A method of testing a candidate compound for the ability to act as an agonist of a high affinity melatonin receptor ligand, said method comprising:

a) contacting said candidate compound with a cell comprising an expression vector encoding a high-affinity melatonin receptor protein consisting of the amino acid sequence of SEQ ID NO:6, or a melatonin binding fragment thereof, wherein the cell expresses on its surface said high-affinity melatonin receptor protein or melatonin binding fragment thereof;

b) measuring intracellular cAMP concentration in said cell; and

c) where said contacting causes a decrease in intracellular cAMP concentration, identifying said candidate compound as an agonist of a high affinity melatonin receptor ligand. --